
 <b>STATE OF ALASKA</b> <b>DEPARTMENT OF TRANSPORTATION</b> <b>AND PUBLIC FACILITIES</b>		POLICY AND PROCEDURE NUMBER <b>11.04.031</b>	PAGE  1 of 21
		EFFECTIVE DATE July 1, 2002	
SUBJECT  <b>Preventive Maintenance</b>		SUPERSEDES  11.04.031	DATED  6/16/2000
TITLE <b>State Equipment Fleet</b>	CHAPTER <b>Equipment Use, Care and Maintenance</b>	APPROVED BY 	

## PURPOSE

### Introduction:

- A. Regularly scheduled service and inspection of vehicles and equipment is the cornerstone of fleet safety, maintenance and operational integrity, and controlling maintenance costs. The main components of a preventive maintenance service (PM) program are:
  - 1. Inspection and repair at regular pre-determined intervals.
  - 2. Lubrication and service at regular pre-determined intervals.
- B. Adherence to these components of preventive maintenance will help extend machine service life, improve availability and reliability, reduce major component repair and replacement expenses, and enhance disposal value.
- C. These procedures outline the minimum program for Preventive Maintenance and Service of state owned equipment.

### Responsibility/Performance:

SEF Managers:	Ensure compliance with this procedure.
Shop Supervisors and Mechanics:	Ensure the minimum PM standards are adhered to.
User Agency:	Ensure vehicles are available when PM inspection is due.

### Definitions:

#### PM Service:

The combined operation of lubrication and service, inspection, and performance of adjustments and minor repairs on a regularly scheduled basis. This operation is a PM Inspection.

## Annual Dry Asset Inspection:

An annual inspection of Dry assets to insure that the PM services are being performed and documented in accordance with this P&P.

## Reference:

Applicable Manufacturer's Service and Lubrication Guides

## PROCEDURE

- A. PM intervals and procedures shall be based on original equipment manufacturer's (OEM) recommendations and standard industry practice with appropriate adjustments for Alaska operating conditions.
- B. Pre-determined service and inspections intervals for all classes of vehicles and equipment shall be established.
- C. Each PM inspection will consist of a simultaneous operation of lubrication and servicing, inspection, adjustment, and minor repair.
- D. Major repair needs discovered during PM will be documented and subsequently scheduled into the repair shop for completion. Discovery of repair or service needs that affect safe or economical operation of a vehicle will require placing the vehicle out-of-service until the problem is corrected.
- E. Successive PM Inspection levels shall consist of:
  - 1. PM A Inspections.
  - 2. PM B Inspections (not currently used).
  - 3. PM C Inspections.
- F. Each successive PM inspection level will be more comprehensive than the last leading up to the "C" or most thorough level.
- G. PM Inspections will be based on intervals of hours, miles, fuel used, or time and may be adjusted to suit the specific needs of the various equipment classes and districts.

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- H The PM intervals listed in Attachment A, Preventive Maintenance Schedule, represent the maximum service intervals of the affected vehicle class. Authority to change the maximum service intervals shall rest with the Statewide Fleet Manager.

Each PM inspection shall be conducted according to the appropriate PM inspection check sheet and recorded on a shop work order that will include the parts cost, commodities used, and labor hours required to do the work.

- J Only qualified maintenance personnel shall perform PM inspections.
- K All new equipment shall be given a thorough pre-delivery inspection before being placed in service. Such inspection shall be documented on a pre-delivery report.
- L Each major group of equipment shall have a PM check sheet specifically designed to accomplish proper servicing and inspection routines. Examples of check sheets are shown in Attachment B. The SEF Regional Equipment Managers shall approve all check sheets within their respective regions.
- M The PM mechanic will check all appropriate items on the inspection sheet as they are completed. The PM mechanic is to adjust, tighten, lubricate, or add fluid required for each of the operations listed.
- N PM scheduling will be the responsibility of the SEF District Manager, or a designee. A computerized scheduling list will be available from the Equipment Management System (EMS).
- O The PM mechanic, Shop Supervisor, or other person designated by the SEF District Equipment Manager shall, where practical, road test or field test the vehicle after PM is complete.
- P Completed PM work orders shall be reviewed by the Shop Supervisor and/or Superintendent. The SEF District Equipment Manager should review discrepancies or unusual reports. After completion and review, PM work orders are to become a part of the equipment file.
- Q Vehicles shall be emission tested (IM) where required (i.e. Anchorage and Fairbanks) in accordance with local municipal ordinances and state statutes governing IM testing. Non-compliant vehicles will be deadlined or repaired.

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- R. Dry assets shall be inspected annually by SEF to insure that they had their PMs performed and documented in accordance with this P&P. Dry assets that are non-compliant shall be deadlined until their deficiencies have been corrected and they have been re-inspected and found to be compliant. Habitual failure to properly maintain Dry assets will result in the conversion of those assets to Wet status.

## **IMPLEMENTATION RESPONSIBILITY**

Headquarters and Regional Directors

## **DISTRIBUTION**

All Holders of the Department of Transportation & Public Facilities Policy and Procedure Manual

# ATTACHMENT A PREVENTIVE MAINTENANCE AND SERVICE SCHEDULE

<u>Equipment Group</u>	<u>Inspection Type</u>	<u>Maximum Interval</u>
Light Duty Vehicles (Including DPS Judicial Services & Administration)	A	6 months/5,000 miles
	C	36 months/30,000 miles
DPS Vehicles (All classes except Judicial Services & Administration)	A	6 months/3,000 miles
	C	36 months/30,000 miles
Light Duty (Seasonal Use)	A	12 months/5,000 miles
	C	36 months/30,000 miles
Heavy Duty Trucks	A	250 hours/5,000 miles
	C	Annual
Heavy Duty Trucks (Seasonal Use)	A	12 months/250 hours/5,000 miles
	C	24 months/1,000 hours/20,000 miles
Heavy Equipment	A	250 hours
	C	Annual
Heavy Equipment (Seasonal Use)	A	12 months/250 hours
	C	24 months/1,000 hours
Motor Graders	A	250 hours
	C	Annual
Motor Graders (Seasonal Use)	A	12 months/250 hours
	C	24 months/1,000 hours
Snow Blowers, Sweepers, Brooms, Traffic Markers, Auger Drills, Brush Cutter/Shredder, Boilers	A	250 hours
	C	Annual
Attachments	A	With parent
	C	With parent
Sanders	A	With host when mounted
	C	Annual
Trailers	C	Annual
Miscellaneous Support Equipment	A	250 hours
	C	Annual
Dry Vehicle		Annual or Bi-Annual



# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 2 of 15: Light Duty Vehicles - Back

	A	B	C
E N G I N E	Check engine operation		
	Check choke & throttle linkage		
	Check radiator - clean as required		
	Check water pump & fan		
	Check all belts & hoses		
	Check carburetor, fuel pump & lines		
	Check cold starting aids		
	Pressure test radiator		
	Compression test		
	Tune up: scope test including:  Adjust timing, voltage & pattern mixture, idle speed, check ignition points, coil, plugs & wires, emission controls. Change as required.		
Steam clean engine			
D R I V E T R A I N	Check drivelines, joints, center bearings		
	Check clutch; adjust as required		
	Check transmission for operation		
	Check transfer case & 4x4 operation		
B R A K E S	Check brake pedal operation & reserve		
	Check condition of brakes		
	Adjust brakes		
	Check parking/emergency brake		
	Check master cylinder; levels & leaks		
	Check shoes, calipers, rotors & wheel cylinders. Replace as required.		
Check drums & front wheel bearings			
S T E E R I N G	Check steering gear assembly, including tie rods & ends, drag link, pitman arm, king pins		
	Check wheel alignment		

	A	B	C
W H E E L S & T I R E S	Check & record air pressure		
	<div style="text-align: center;"> <input type="checkbox"/>   ↑   <input type="checkbox"/>  <input type="checkbox"/>   <input type="checkbox"/> Front   <input type="checkbox"/>   <input type="checkbox"/> </div>		
	Inflate to recommended levels		
	Check for valve caps		
	Check wear & condition		
	Rotate as required		
	Check toe in - balance		
	Check wheel lug nuts/check run out		
	Inspect wheels for cracks		
	Check for hubcaps		
R O A D T E S T	<b>Road test after all PM inspections &amp; check:</b>		
	Clutch action		
	Transmission - shifting correctly		
	Engine - smooth acceleration, knocks		
	Unusual noises, overheating, oil leaks & pressure		
	Brakes - smooth even stops		
	Roadability - check steering, excessive play, wandering, pulling to sides, of shimmy		
Comments:			
<p style="text-align: center;">**** PM Completed ****</p> <p>Road test performed: Vehicle is road ready.</p> <p>Signed: _____</p>			

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 3 of 15: Heavy Duty Trucks - Front

## Preventive Maintenance Inspection

### HEAVY DUTY TRUCKS

(Class 200 & up, medium & heavy duty trucks)

Date \_\_\_\_\_ Insp. Type \_\_\_\_\_

Location (Shop I/D) \_\_\_\_\_

Mechanic \_\_\_\_\_

Vehicle No. _____ W/O # _____		
Vehicle Description _____		
Hours _____	Miles _____	
- INSPECTIONS -		
PM C Annual _____		
PM B None _____		
PM A 4 months/250 hrs./4,000 miles _____		
Codes: ✓ = Okay      A = Adjust R = Replacement/Repair (R Items to go on Work Order)		
	A    B    C	
B O D Y	"Walk-around" check for physical damage	
	Check paint & general appearance	
	Check decals, license plate, equipment number	
	Check mudflaps, winterfront	
C A B & I N S T R U M E N T S	Check instruments, gauges, warning lights	
	Check hour meter for operation	
	Check horns - air, electric, backup	
	Check heater, defroster	
	Check mirrors, all glass	
	Check door and window operation	
	Check safety equipment - fire extinguisher	
	Check seats, seatbelts, floor mats	
	Check windshield wipers & washer - change blades, add fluid as required	
	Check lights, turn signals, 4 ways	
E L E C T R I C A L	Check emergency lighting	
	Check low air pressure warning system	
	Check battery including hold downs & cables	
	Check wiring, connections, grounds	
	Check master switch if equipped	
	Check starter for proper operation	
	Check starter/alternator mounting	
	Check fuse box including spares	
Clean & lube posts & cables		
Check Starter current drawdown		

	A	B	C	
L U B E & S E R V I C E	Change engine oil & filter: Check level			
	Change fuel filter(s)			
	Check air restriction reading			
	Air cleaner: clean & inspect; change as required			
	Check antifreeze condition & freeze point			
	Check coolant filter, change annually or as req'd.			
	Change hydraulic oil filter(s)			
	Check wheel seal lube levels			
	Drain air tank of water and oil			
	Check all fluid levels - top off as needed			
	Lube all fittings			
	Service & lube all accessory equipment			
	Clean breathers - eng., diff., trans.			
	Lube throttle linkage			
	Check magnetic plugs			
C H A S S I S	Take engine oil sample as required			
	Lube speedo/tach cables			
	Drain & refill trans & differential			
	Apply lubeplate - hood & door latches			
	Check frame & cross members			
	Check all U-bolts & trunion bolts			
	Check engine, trans., differential mounting			
	Check all spring shackles & mounting			
	Check radius & torque rods			
	Inspect 5 <sup>th</sup> wheel & mounting			
Check dump box condition & mounting				
Check plow hitch mounting				
Check fuel & hydraulic tank mounting				
Check exhaust system				

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 4 of 15: Heavy Duty Trucks - Back

	A	B	C	
ENGINE	Start engine; Check throttle & accel. controls			
	Check RPM: Idle _____ max _____			
	Check governor cut-out			
	Check Jake brake operation			
	Check oil pressure (hot) idle _____ speed _____			
	Check for leaks, blowby			
	Clean radiator frontal area			
	Check radiator cap, relief valve, overflow			
	Check shuuter operation if equipped			
	Check water pump for leaks & bearing play			
	Check air compressor condition & mounting			
	Check all lines & hoses & belts			
	Check air dryer system			
	Check emergency shutdown			
	Steam clean engine			
	Check engine fuel pressure			
	Engine tune up: adjust injectors, valves, timing. Scope test			
	Check turbocharger			
Pressure test cooling system				
DRIVE TRAIN	Check clutch for operation & freeplay			
	Check clutch brake			
	Check transmission for proper operation			
	Check 2-speed axle controls			
	Check driveline, U-joints, center bearing			
	Check axle flange nuts			
	Check all hydraulic controls including PTO			
BRAKES	Check & adjust all brakes including parking			
	Check all airlines/gladhands for condition			
	Check operation of trailer protection valve			
	Check air buildup & governor for leaks			
	Check S-cams, slack adjusters			
	Check condition of brake lining			
	Remove wheels: inspect drums for cracks & wear; reline brakes as needed; check all bearings, replace as needed			
	Check brake cans & diaphragms. Replace as needed			

	A	B	C	
STEERING	Check front springs & suspension			
	Check steering assy including tie rod ends & drag link			
	Check pitman arm & nut; kingpins			
	Remove front wheels & inspect			
	Jack up front end; check kingpins			
	Check alignment as necessary			
WHEELS & TIRES	Check & record air pressure			
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input type="checkbox"/>  <input type="checkbox"/> </div> <div style="text-align: center;"> <input type="checkbox"/>  <input type="checkbox"/> </div> <div style="text-align: center;">             ↑              Front           </div> <div style="text-align: center;"> <input type="checkbox"/>  <input type="checkbox"/> </div> <div style="text-align: center;"> <input type="checkbox"/>  <input type="checkbox"/> </div> </div>			
	Inflate to recommended levels			
	Check for wear/condition - rotate as required			
	Check for valve caps			
	Check wheel lug nuts			
	Inspect wheels for cracks			
	Check toe in - balance - wheel run-out			
	<b>Road test after all PM inspections &amp; check:</b>			
	Clutch/transmission			
Brakes				
Driveline (vibration)				
Engine controls/performance				
Steering handling				
Check & inspect attachments using the PM checksheet for attachments.  Attach checksheet used: <input type="checkbox"/> Yes <input type="checkbox"/> No Comments:				
**** PM Completed ****  Road test performed: Vehicle is road ready.  Signed: _____				

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 5 of 15: Heavy Equipment - General - Front

## Preventive Maintenance Inspection

Date \_\_\_\_\_ Insp. Type \_\_\_\_\_

Location (Shop I/D) \_\_\_\_\_

### HEAVY EQUIPMENT - GENERAL

Mechanic \_\_\_\_\_

(All heavy equipment classes except Graders & Snowblowers)

Equip. No. _____ W/O # _____				
Equip. Description _____				
Hours _____				
<b>- INSPECTIONS -</b>				
PM C Annual _____				
PM B 500 Hours _____				
PM A 250 Hours/4 Months _____				
Codes: ✓ = Okay      A = Adjust				
R = Replacement/Repair				
(R Items to go on Work Order)				
		A	B	C
B O D Y	"Walk-around" check for physical damage			
	Check paint & general appearance			
	Check decals, license plate, equipment number			
	Steam clean machine			
C A B & I N S T R U M E N T S	Check all gauges & instruments			
	Check hour meter for operation			
	Check warning lights, horn, back up alarm			
	Check doors, windows, EROPS			
	Check windshield wiper & washer			
	Check lights, turn signals & hazard lights			
	Check seat & seatbelt			
	Check cab interior and safety items			
	Check heater & defroster			
	Check all controls & switches for operation			
E L E C T R I C A L	Check battery including hold downs & cables			
	Check wiring, connections, grounds			
	Check starter for proper operation			
	Check starter/alternator mounting			
	Check fuse box including spares			
	Check master switch if equipped			
	Check starter current drawdown			
	Check amp draw on glow plugs			
	Clean & lube posts & cables			
	Check neutral start switch			

	A	B	C	
L U B E & S E R V I C E	Change engine oil & filter: Check level			
	Change fuel filter(s)			
	Check air restriction reading			
	Air cleaner: clean & inspect; change as required			
	Check pre-cleaner			
	Check antifreeze condition & freeze point			
	Check coolant filter, change annually or as req'd.			
	Change hydraulic oil & filter(s)			
	Check planetary & differential oil levels			
	Check all fluid levels - top off as needed			
	Lube all fittings			
	Service & lube all accessory equipment			
	Clean breathers - Eng., diff., TC			
	Lube throttle linkage			
	Take oil samples as required			
	Drain air tank of water & oil			
	Check magnetic plugs			
	Change oil in all gear boxes, transmission, planetaries & hydraulic system			
	Change transmission filter (or as required)			
	Clean transmission pump screen			
Drain sediment from fuel tank				
C H A S S I S & T R A C K S	Check all mounting brackets/plates			
	Check all pivot joints/hinge pins for wear			
	Check all linkage for operation & wear			
	Check all U-bolts & trunion bolts			
	Check EROPS mounting			
	Check frame locking pin			
	Check frame for cracks, damage			
	Check pin & bushing wear			
	Check rollers, idlers, sprockets			
	Check track pads & rock guards			
Check track, adjust as required				
Check track frames for straight				

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 6 of 15: Heavy Equipment - General - Back

	A	B	C	
ENGINE	Start engine; Check throttle & accel. controls			
	Check oil pressure reading			
	Check cold weather starting aids			
	Check shutdown system			
	Check lines, hoses, connections for leaks			
	Check belts & pulleys			
	Check radiator for leaks & obstruction			
	Check cables & linkage for cond. & operation			
	Check exhaust piping & muffler incl. rain cap			
	Check water pump for leaks & bearing play			
	Check air intake system & turbo			
	Check low & high idle			
	Pressure check cooling system			
	Tune engine: set valves & injectors			
	Check fuel pressure			
Check turbo for operation & bearing wear				
Torque turbo/engine mounting bolts				
DRIVE TRAIN	Check clutch & steering brake adjustment			
	Check trans/torque convertor/PTO			
	Check all linkages for operation and condition			
	Check drop boxes, transfer cases			
	Check planetaries/axles/differential lockout			
	Check FWD/rev/speed range clutch press			
	Check all drive couplings/mid bearings			
	Check trans/TC for internal leakage			
	Check trans cooler pressure - in/out			
	Check convertor pressure - in/out			
	Check trans lube pressure			
	Check unloading valve pressure			
Check main & low pressure relief valve				
Torque trans/TC mounting bolts				
HYDRAULIC	Check all hydraulic controls for proper operation			
	Check all hoses, fittings, connections			
	Check all hydraulic cylinders for wear/leaks			
	Check all pumps for operation/leaks			
	Check boom kickout & bucket leveler			
	Check hydraulic tank mounting			
	Replace hydraulic tank breather			

	A	B	C	
BRAKES	Check brakes for proper operation			
	Adjust parking/emergency brake			
	Bleed air from system			
	Check for leaks - whl. cyl., caliper, master cyl.			
	Check lining/drums/discs			
	Check all hoses/connections for wear, leaks			
Check accumulator precharge pressure				
STEERING	Check all steering components			
	Check secondary steering system			
	Check ball joints, pitman arm, tie rods			
	Check pump for leaks, operation			
	Check steering relief pressure			
TIRES	Check all tires for wear & condition			
	Check tire pressure in all tiers			
	Check wheels, lug nuts & studs			
MISC	Service and inspect any special equipment or components according to manufacturers recommendations			
	Check and inspect attachments using the PM checksheet for attachments. Attachments checksheet used: Yes <input type="checkbox"/> No <input type="checkbox"/>			
OPERATION CHECKS	Perform operational check/road test after all PM inspections:			
	Check engine controls/performance			
	Check transmission/drivetrain			
	Check brakes including parking/emergency			
	Check operation of all machine functions (raise, lower, swing, etc.)			
	Check all accessory controls & equip. for proper operation			
Comments:				
**** PM Completed ****				
Operational test performed: Unit is ready to work.				
Signed: _____				

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 7 of 15: Motor Graders - Front

## Preventive Maintenance Inspection

Date \_\_\_\_\_ Insp. Type \_\_\_\_\_

Location (Shop I/D) \_\_\_\_\_

## Motor Graders

Mechanic \_\_\_\_\_

Equip. No. _____ W/O # _____				
Equip. Description _____				
Hours _____				
- INSPECTIONS -				
PM C Annual _____				
PM B 500 Hours _____				
PM A 250 Hours/4 Months _____				
Codes: ✓ = Okay      A = Adjust				
R = Replacement/Repair				
(R Items to go on Work Order)				
		A	B	C
B O D Y	"Walk-around" check for physical damage			
	Check paint & general appearance			
	Check decals, license plate, equipment number			
	Steam clean machine			
C A B & I N S T R U M E N T S	Check all gauges & instruments			
	Check hour meter for operation			
	Check warning lights, horn, back up alarm			
	Check doors, windows, EROPS			
	Check windshield wiper & washer			
	Check lights, turn & hazard lights			
	Check seat & seatbelt			
	Check cab interior/safety items			
	Check heater & defroster			
	Check all controls & switches for operation			
E L E C T R I C A L	Check battery including hold downs & cables			
	Check wiring, connections, grounds			
	Check starter for proper operation			
	Check starter/alternator mounting			
	Check fuse box including spares			
	Check master switch if equipped			
	Check neutral start switch			
	Check starter current drawdown			
	Check amp draw on glow plugs			
	Clean & lube posts & cables			

	A	B	C	
L U B E & S E R V I C E	Change engine oil & filter: Check level			
	Change fuel filter(s)			
	Check air restriction reading			
	Air cleaner: clean & inspect; change as req'd.			
	Check pre-cleaner			
	Check antifreeze condition & freeze point			
	Check coolant filter, change annually or as req'd.			
	Change hydraulic oil			
	Check hydraulic oil filter			
	Check tandem/final/transmission fluid level			
	Check all fluid levels - top off as needed			
	Lube all fittings			
	Service & lube all accessory equipment			
	Clean breathers - eng., diff., trans., TC			
	Lube throttle linkage			
	Take oil samples as required			
	Drain air tank of water & oil			
	Check magnetic plugs			
	Change oil in all gear boxes, transmission			
	Change single reduction SR30-SR40 lube			
Change tandem fluid				
Change transmission filter (or as required) & clean transmission pump screen				
Drain sediment from fuel tank				
C H A S S I S	Check all mounting brackets/plates			
	Check all pivot joints/hinge pins for wear			
	Check all linkage for operation & wear			
	Check all U-bolts & trunion bolts			
	Torque EROPS mounting bolts			
	Check articulation anchor pins			
	Torque hydraulic pump mounts			
	Torque final drive to frame			
	Torque final drive to tandems			
	Check transmission mounting			
Check hydraulic tank mounting				

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 8 of 15: Motor Graders - Back

	A	B	C	
ENGINE	Start engine; Check throttle & accel. controls			
	Check oil pressure reading			
	Check cold weather starting aids			
	Check shutdown system			
	Check lines, hoses, connections for leaks			
	Check belts & pulleys			
	Check radiator for leaks & obstruction			
	Check cables & linkage for cond. & operation			
	Check exhaust piping & muffler incl. rain cap			
	Check water pump for leaks & bearing play			
	Check air intake system & turbo			
	Check low & high idle			
	Pressure check cooling system			
	Tune engine: set valves & injectors			
	Check fuel pressure			
Check turbo for operation & bearing wear				
Torque turbo/engine mounting bolts				
DRIVE TRAIN	Check clutch operation and adjustment			
	Check trans/torque convertor			
	Check all linkages for operation and condition			
	Check drop boxes, transfer cases			
	Check all driveshafts/couplings			
	Check trans/TC for internal leakage			
	Check tandem case for damage/leaks			
	Check trans cooler pressure - in/out			
	Check convertor pressure - in/out			
	Torque rear axle nut			
Adjust trans lube/lockup pressure				
HYDRAULIC	Check hydraulic pump(s) for operation/leaks			
	Check all hydraulic controls for proper operation			
	Check primary hydraulic relief setting			
	Check all hoses, fittings, connections			
	Check all hydraulic cylinders for wear/leaks			
CLEANING	Adjust circle timing			
	Adjust stirrup bearings			
	Check ball cap adjustment			
	Adjust blade lift cylinder trunnions			
	Adjust drawbar ball studs			
	Torque tilt quadrant bolts			
	Check moldboard sliding surface			
Check cutting edges				

	A	B	C	
BRAKES	Check brakes for proper operation			
	Adjust parking/emergency brake			
	Bleed air from system			
	Check for leaks - whl. cyl., caliper, master cyl.			
	Adjust drum brake linings			
	Check all hoses/connections for wear, leaks			
STEERING	Check all steering components			
	Check secondary steering system			
	Torque radius arm/drag link nut			
	Check ball joints, pitman arm, tie rods			
	Check pump for leaks, operation			
	Check steering relief pressure			
TIRES / WHEELS	Adjust axle pivot bearing preload			
	Adjust pivot block preload			
	Check all tires for wear & condition			
	Check tire pressure in all tires			
MISC	Check wheels, lug nuts & studs			
	Adjust wheel toe in			
	Adjust wheel bearing preload			
	Torque wheel rim clamps			
OPERATION	Service and inspect any special equip. or components according to manufacturers recommendations			
	Check and inspect attachments using the PM checksheet for attachments. Attach checksheet used: Yes <input type="checkbox"/> No <input type="checkbox"/>			
CHECKS	<b>Perform operational check/road test after all PM inspections:</b>			
	Check engine controls/performance			
	Check transmission/drivetrain			
	Check brakes including parking/emergency			
CHECKS	Check operation of all machine functions			
	Check all accessory controls & equipment for proper operation			

\*\*\*\* PM Completed \*\*\*\*

Operation test performed: Unit is ready to work.

Signed: \_\_\_\_\_

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 9 of 15: Snow Blowers - Front

## Preventive Maintenance Inspection

SNOW BLOWERS (Truck & Loader Mounted)

Date \_\_\_\_\_ Insp. Type \_\_\_\_\_

Location (Shop I/D) \_\_\_\_\_

Mechanic \_\_\_\_\_

Equip. No. _____ W/O # _____				
Equip. Description _____				
Hours _____				
- INSPECTIONS -				
PM C 800 Hours/24 Months _____				
PM B 400 Hours/12 Months _____				
PM A 100 Hours/6 Months _____				
Codes: ✓ = Okay      A = Adjust R = Replacement/Repair (R Items to go on Work Order)				
	A    B    C			
B O D Y	"Walk-around" check for physical damage			
	Check paint & general appearance			
	Check decals, license plate, equipment number			
	Steam clean machine			
	Spot paint unit & replace service instruction decals as required			
C A B & I N S T R U M E N T S	Check all gauges & instruments			
	Check hour meter for operation			
	Check warning lights, horn, back up alarm			
	Check doors, windows, EROPS			
	Check windshield wiper & washer			
	Check lights, turn & hazard lights			
	Check seat & seatbelt			
	Check cab interior/safety items			
	Check heater & defroster			
	Check all controls & switches for operation			
E L E C T R I C A L	Check battery including hold downs & cables			
	Check wiring, connections, grounds			
	Check starter for proper operation			
	Check starter/alternator mounting			
	Check fuse box including spares			
	Check master switch & neutral start switch			
	Check starter current drawdown			
	Test battery: clean & lube posts and cables			
	Check amp draw on glow plugs			

	A    B    C			
L U B E & S E R V I C E	Change engine oil & filter: Check level			
	Change fuel filter(s)			
	Check air restriction reading			
	Air cleaner: clean & inspect; change as req'd.			
	Check pre-cleaner			
	Check antifreeze condition & freeze point			
	Check coolant filter, change annually or as req'd.			
	Change hydraulic oil & filters			
	Filter all hydraulic oil			
	Check planetary & differential oil levels			
	Check all fluid levels - top off as needed			
	Lube all fittings per manufacturers specifications			
	Service & lube all accessory equipment			
	Clean breathers - eng., diff., trans., TC			
	Lube throttle linkage			
	Take oil samples as required			
	Drain air tank of water & oil			
	Check magnetic plugs			
	Change oil in all gear boxes, transmission, differential, drop boxes			
	Change transmission filter (or as required)			
Change transmission pump screen				
Drain sediment from fuel tank				
C H A S S I S	Check all mounting brackets/plates			
	Check all pivot joints/hinge pins for wear			
	Check all linkage for operation & wear			
	Check all U-bolts & trunion bolts			
	Check frame for cracks, damage			
	Tighten all mounts: eng., radiator cowlings, etc.			

## Page 10 of 15: Snow Blowers - Back

		A	B	C
BRAKES	Check brakes for proper operation			
	Adjust all brakes including parking & emergency			
	Check all brakes for wear & replace as required			
	Check all hoses/connections for wear, leaks			
	Check lines, master cylinder, etc. for leaks, wear			
STEERING	Check all steering components			
	Check secondary steering system			
	Check ball joints, pitman arm, tie rods			
	Check pump for leaks, operation			
	Check steering relief pressure			
TIRES	Check all tires for wear & condition and proper mounting			
	Check tire pressure in all tires			
	Check wheels, lug nuts & studs			
BLOWER ASSEMBLY	Check volute for wear. Repair with insert as required.			
	Check paddles for wear. Replace as required.			
	Check reel flights for wear. Replace as required.			
	Check shoes for wear			
	Check blower head for stress cracks			
	Check right angle gear box for wear			
	Check all U-joints			
	Check chains & sprockets for wear			
OPERATIONAL CHECK	<b>Perform operational check/road test after all PM inspections:</b>			
	Check engine controls/performance			
	Check transmission/drivetrain			
	Check brakes including parking/emergency			
	Check operation of all machine functions			
	Check all accessory controls & equipment for proper operation			
Comments:				
**** PM Completed ****				
Operational test performed: Unit is ready to work.				
Signed:				

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

## Page 11 of 15: Attachments/Sanders & Trailers

### Preventive Maintenance Inspection

Equip. No. \_\_\_\_\_ W/O # \_\_\_\_\_  
 Equip. Description \_\_\_\_\_  
 Hours \_\_\_\_\_

Date \_\_\_\_\_ Insp. Type \_\_\_\_\_

Location (Shop I/D) \_\_\_\_\_

Mechanic \_\_\_\_\_

*** Attachments/Sanders ***				
PM C 800 Hours/24 Months _____ PM B 400 Hours/12 Months _____ PM A 100 Hours/6 Months _____				
Codes: ✓ = Okay      A = Adjust R = Replacement/Repair (R Items to go on Work Order)				
		A	B	C
B O D Y / C H A S S I S	*** Attachments/Sanders ***			
	Check for physical damage & condition			
	Check for license plate & equipment number			
	Check for loose bolts & fittings			
	Check for wear/cracks			
	Check all lines, hoses, fittings			
	Check all mounting brackets, plates			
	Check all hydraulic cylinders			
	Check all locking/pin connections			
	Check condition of wear edges/points			
	Check all lights/reflectors			
	Check all electrical connections			
L U B E	Check tire condition/pressure			
	Lube & service per manufacturers chart			
	Lube & service accessory equipment			
	Check all fluid levels			
	Repack wheel bearings			
S A N D E R	Steam clean (flush sander box)			
	Change gear box oil/check bearings			
	Oil conveyor chain			
	Adjust conveyor chain			
	Check & lube all bearings			
	Check sander box sheet metal			

*** Trailers ***								
		A = 6 Months	B = None	C = Annual	A	B	C	
B O D Y / C H A S S I S	Check for physical damage & general condition							
	Check for license plate & equipment number							
	Check for mud flaps, tie downs							
	Check for loose bolts & fittings							
	Check for wear/cracks							
	Check condition of decking/ramps							
	Check condition of kingpin							
	Check landing gear/jack stand							
	Check hitch pintle/safety chains							
	Check all locking/pin connections							
	Check all lights/reflectors							
	Check hydraulic cylinders							
Check lines, hoses, wiring								
B R A K E S	Check tank trailers for leaks, including valves, piping, pumps, spray bars							
	Adjust brakes; check condition							
	Drain air tanks							
	Check airlines including gladhands							
	Check brake pads, shoes, drums							
	Repack wheel bearings							
	Check tires for condition & wear							
	Check tire inflation							
	L U B E	Lube all fittings per chart						
		Lube & service all accessory equipment according to chart						

\*\*\*\* PM Completed \*\*\*\*

Unit is services and ready to work.

Signed: \_\_\_\_\_

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

## Page 12 of 15: Miscellaneous Support Equipment - Front

### Preventative Maintenance Inspection

**Misc. Support Equipment** - Rollers, sweepers, A/C dist. tar pots, hydraulic booms/cranes/liftgates, auger drills, brush cutters, paint striper, chip spreader, portapatcher, garbage packer, steam generator & boiler, air compressor, welder & other misc. equipment.

**Note: Make sure Support Equipment Supplement sheet is attached.**

Date \_\_\_\_\_ Insp. Type \_\_\_\_\_

Shop I/D \_\_\_\_\_

Mechanic \_\_\_\_\_

Equip. No. _____ W/O # _____				
Equip. Description _____				
Hours _____				
- INSPECTIONS -				
PM C Annual _____				
PM B None _____				
PM A 100 Hours _____				
Codes: ✓ = Okay      A = Adjust R = Replacement/Repair (R Items to go on Work Order)				
	A    B    C			
B O D Y	"Walk-around" check for physical damage			
	Check paint & general appearance			
	Check decals, license plate, equipment number			
	Check mud flaps, winterfront, roller wiper pads			
	Steam clean machine			
C A B & I N S T R U M E N T S	Check all gauges & instruments			
	Check hour meter for operation			
	Check warning lights, horn, back up alarm			
	Check doors, windows, EROPS			
	Check windshield wiper & washer			
	Check lights, turn & hazard lights			
	Check seat & seatbelt			
	Check cab interior/safety items			
	Check heater & defroster			
	Check all controls & switches for operation			
E L E C T R I C A L	Check all mirrors & glass			
	Check neutral start switch			
	Check wiring, connections, grounds			
	Check battery including hold downs & cables			
	Check fuse box including spares			
	Check master switch if required			
	Check starter for proper operation			
	Check starter/alternator mounting			
	Check amp draw on glow plugs			
	Clean & lube battery posts & cables			
Check starter current drawdown				

	A	B	C	
L U B E & S E R V I C E	Change engine oil & filter: Check level			
	Change fuel filter(s)			
	Check air restriction reading			
	Air cleaner: clean & inspect; change as req'd.			
	Check pre-cleaner			
	Check antifreeze condition & freeze point			
	Check coolant filter, change annually or as req'd.			
	Change hydraulic oil & filters			
	Check planetary & differential oil levels			
	Drain air tank of water & oil			
	Check all fluid levels - top off as needed			
	Lube all fittings			
	Service & lube all accessory equipment			
	Clean breathers - eng., diff., trans.			
	Lube throttle linkage			
	Check magnetic plugs			
C H A S S I S	Take oil samples as required			
	Change oil in all gear boxes, transmission, planetaries and hydraulic system			
	Change transmission filter (or as required)			
	Clean transmission pump screen			
	Pack wheel & roller bearings as needed			
	Drain sediment from fuel tank			
	Check all mounting brackets/plates			
	Check all pivot joints/hinge pins for wear			
	Check all linkage for operation & wear			
	Check all U-bolts & trunion bolts			
	Check EROPS mounting			
	Check frame locking pin			
	Check frame for cracks, damage			
	Check suspension			
	Check mounted body for condition & operation			

## Page 13 of 15: Miscellaneous Support Equipment - Middle

## Equipment No. \_\_\_\_\_

[illegible]

# ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 14 of 15: Miscellaneous Support Equipment - Back

	A	B	C
E N G I N E	Start engine; Check throttle & accel. controls		
	Check oil pressure reading		
	Check cold weather starting aids		
	Check shutdown system		
	Check lines, hoses, connections for leaks		
	Check belts & pulleys		
	Check radiator for leaks & obstruction		
	Check cables & linkage for cond. & operation		
	Check exhaust piping & muffler incl. rain cap		
	Check water pump for leaks & bearing play		
	Check air intake system & turbo		
	Check low & high idle		
	Pressure check cooling system		
	Tune engine; set valves & injectors		
	Check fuel pressure		
	Check turbo for operation & bearing wear		
Torque turbo/engine mounting bolts			
D R I V E T R A I N	Check clutch/steering brake adjustment		
	Check trans/torque convertor/PTO		
	Check all linkages for operation and condition		
	Check drop boxes, transfer cases		
	Check planetaries/axles/differential lockout		
	Check clutch pressure where applicable		
	Check all drive couplings/mid bearings		
	Check trans/TC for internal leakage		
	Check trans cooler pressure		
	Check convertor pressure		
	Check transmission lube pressure		
	Torque transmission/TC mounting bolts		
H Y D R A U L I C	Check all hydraulic controls for proper operation		
	Check all hoses, fittings, connections		
	Check all hydraulic cylinders for wear/leaks		
	Check all pumps for operation/leaks		
	Check hydraulic tank mounting		
	Replace hydraulic tank breather		

	A	B	C
B R A K E S	Check brakes for proper operation		
	Adjust parking/emergency brake as required		
	Bleed air from system		
	Check linings/drums/discs		
	Check for leaks - whl. cyl., caliper, master cyl.		
	Check all hoses/connections for wear, leaks		
S T E E R I N G	Check accumulator precharge pressure		
	Check all steering components		
	Check ball joints, pitman arm, tie rods		
	Check pump for leaks, operation		
T I R E S	Check steering relief pressure		
M I S C	Check all tires for wear & condition		
	Check tire pressure in all tires		
	Check wheels, lug nuts & studs		
O P E R A T I O N C H E C K	Service and inspect any special equip. or components according to manufacturers recommendations		
	Use miscellaneous Support Equipment Supplement sheet to cover inspections for specific types of equipment		
	<b>Perform operational check/road test after all PM inspections:</b>		
	Check engine controls/performance		
	Check transmission/drivetrain		
	Check brakes including parking/emergency		
	Check operation of all machine functions (Raise, lower, etc.)		
	Check all accessory controls & equipment for proper operation		
	Check operation of all machine functions		
	Comments:		
<p align="center"><b>**** PM Completed ****</b></p> <p>Operational test performed: Unit is ready to work.</p> <p>Signed: _____</p>			

ATTACHMENT B - PREVENTIVE MAINTENANCE & INSPECTION CHECK SHEETS

Page 15 of 15: Annual Dry Inspection

Equip. No. \_\_\_\_\_ WO # \_\_\_\_\_ Date \_\_\_\_\_

Vehicle Description \_\_\_\_\_ Hours or Miles \_\_\_\_\_

Pass \_\_\_\_\_ Fail \_\_\_\_\_

Inspection Item

Finding

Review customer's records for documentation of PMs and repairs

Check VIN and license plate numbers against EMS master record

When required check for current IM inspection

Check fluid levels and condition

Inspect at least one wheel for brake condition

Inspect tire condition

Inspect underside of vehicle for fluid leaks; damage; and condition

of exhaust, steering, fuel, and brake systems

Inspect exterior for damage

Check lights for operation

Check vehicle for required state decals

Check vehicle for emergency equipment

Inspect interior and exterior for cleanliness

Conduct short road test of vehicle

Take picture of vehicle for SEF file

Inspected by \_\_\_\_\_

**DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES  
STATEWIDE EQUIPMENT FLEET  
EQUIPMENT RECEIVING REPORT**

<b>Delivery Date</b> _____	<b>Unit VIN</b> _____	<b>Hour Meter Reading</b> _____
<b>Asset No.</b> _____	<b>Class</b> _____	<b>Odometer Reading</b> _____
<b>Delivery Order</b> _____	<b>Mdl Year</b> _____	<b>Color</b> _____
<b>PR No.</b> _____	<b>Manufacturer</b> _____	<b>Replaced/Add No.</b> _____
<b>Bid No</b> _____	<b>Model</b> _____	<b>Location</b> _____
<b>Attachment(s)</b> _____	<b>Description</b> _____	
<b>Warranty Information:</b>		<b>Warranty Start Date</b> _____
		<b>Date Vendor Notified</b> _____
		<b>Initials</b> _____

**Credit Card Ordering Information:**

**VENDOR**

☐ STATE CREDIT CARD   ☐ FUELMAN CREDIT CARD   ☐ OTHER

**Date Ordered** \_\_\_\_\_ **Date Received** \_\_\_\_\_

POWER TRAIN	ELECTRICAL	HYDRAULIC SYSTEM	
Engine Make	Alternator No.	Pumps & Motors	
Model		Hoses, Lines & Valves	
Serial No.		Holsts	
Main Transmission Assy.	Headlights	<b>PARTS &amp; SERVICE MANUAL</b>	
Make	Parking Lights	RF	LF
Model		RF	LF
Serial No.		RR	LR
Auxiliary Transmission	Clearance Lights	CAB	
Make		RF	LF
Model		RR	LR
Serial No.			
Rear Axle Assy - Single	Marker Lights	RF	LF
Tande		RR	LR
Make	Stop Lights	R	L
Model	Tail Lights	R	L
Serial No.			
<b>BRAKE SYSTEM</b>		<b>WHEELS &amp; HUBS</b>	
Hoses, Lines, Fittings,	Turn Signals	RF	LF
Tanks, Pump		RR	LR
Brake Assembly	3 Light Cluster	F	R
	4 Way Flasher	RF	LF
<b>SUSPENSION</b>		RR	LR
Front Spring Capacity	Back-Up Light		
	License Light		
		RF	LF
Tandem Suspension Assembly	Reflectors	RR	LR
Make		RR	LR
Model	Dome Light		
	Wiring (General)		
<b>FRONT AXLE &amp; STEERING</b>			
		Front Axle Assembly	
		Make	
		Model	
		Steering Assembly	
		Make	
		Model	
<b>ITEMS MISSING - DAMAGES - REMARKS</b>			

It is mandatory that this check sheet be used when receiving all units: Major components such as engine, transmission, etc., should have model name and number written in appropriate block. The key diagram should indicate condition of each item checked.  
OK - Operating Property, Oil levels and lubrication checked X - Not in working order O - Not supplied N - Not installed but with vehicle

\_\_\_\_\_  
Signature of Inspecting Employee

Date

\_\_\_\_\_  
Signature of Regional Equipment Manager for Unit Acceptance

Date

EMS ☐ PLATES ☐ PAY ☐



**ITEM DOES NOT MEET SPECS**  
(REFERENCE REMARKS SECTION ABOVE)